

Message

From: Post, Gloria [Gloria.Post@dep.nj.gov]
Sent: 2/28/2019 6:15:50 PM
To: Washington, John [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fdc3e8ce9f1d45c4894881ff420ca104-Washington, John]
CC: Strynar, Mark [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5a9910d5b38e471497bd875fd329a20a-Strynar, Mark]
Subject: structure of PFAS found in blood serum in NC State study
Attachments: Hydro EVE.sk2

John,

FYI, in case you do not already have this information.

Gloria

From: Strynar, Mark <Strynar.Mark@epa.gov>
Sent: Friday, February 15, 2019 9:53 AM
To: Post, Gloria <Gloria.Post@dep.nj.gov>
Subject: [EXTERNAL] RE: PFAS of interest

Gloria,

Here are the structures for Nafion BP2, PFO4DA, PFO5DoDA, and Hydro-EVE. Here are the corresponding hyperlinks (in blue) to them in the DSS TX Chemicals dashboard. I pasted these as images so they will not work. But if you here they are hyperlinked below

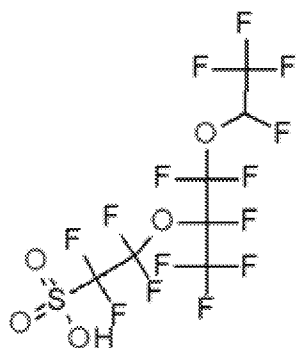
Nafion BP2 <https://comptox.epa.gov/dashboard/dsstoxdb/results?search=DTXSID10892352>

PFO4DA <https://comptox.epa.gov/dashboard/dsstoxdb/results?search=DTXSID90723993>

PFO5DoDA <https://comptox.epa.gov/dashboard/dsstoxdb/results?search=DTXSID50723994>

Hydro-EVE not in production database yet. See attached structure.

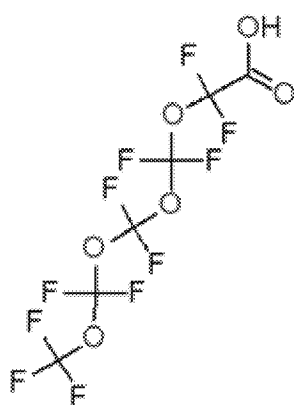
Mark



PFESA BP2; Nafion BP2

CAS: 749836-20-2

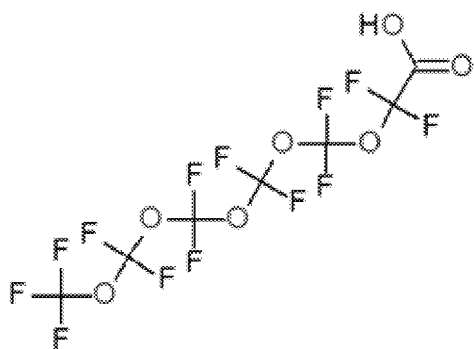
DTXSID10892352



PFO4DA

CAS: 39492-90-5

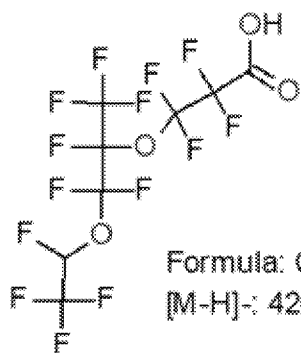
DTXSID90723993



PFO5DoA

CAS: 39492-91-6

DTXSID50723994



Formula: $C_8H_2F_{14}O_4$
[M-H]⁻: 426.9657

Hydro EVE

CAS: 773804-62-9

From: Post, Gloria <Gloria.Post@dep.nj.gov>

Sent: Friday, February 15, 2019 9:12 AM

To: Strynar, Mark <strynar.mark@epa.gov>

Subject: FW: PFAS of interest

From: Post, Gloria

Sent: Wednesday, January 30, 2019 6:39 PM

To: 'Ng, Carla' <carla.ng@pitt.edu>

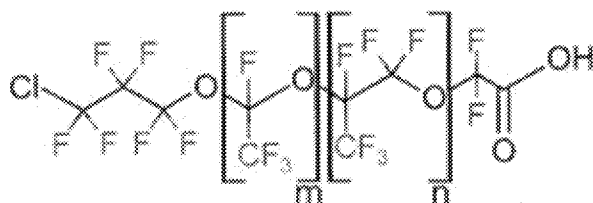
Subject: PFAS of interest

Carla,

I am sending information on the PFAS that we are interested in learning more about. I can explain why these PFAS are of interest to NJDEP when we speak on the phone. Can you let me know when a good time for us to talk on the phone would be during the week of Feb. 12?

1. Congeners of the substance referred to as "Solvay's Product" in Figure 1 (attached) of Wang et al. (2013).

This is another version of its structure:



The congeners of interest are shown below. The 8 carbon congener is of greatest interest, but it would be great to have information on all of them.

| Carbon Chain Length | Anion Formula | Number of Ethyl, Propyl Groups |
|---------------------|--|--------------------------------|
| 7 | C ₇ ClF ₁₂ O ₄ | 1,0 |
| 8 | C ₈ ClF ₁₄ O ₄ | 0,1 |
| 9 | C ₉ ClF ₁₆ O ₅ | 2,0 |
| 10 | C ₁₀ ClF ₁₈ O ₅ | 1,1 |
| 11 | C ₁₁ ClF ₂₀ O ₅ | 0,2 |
| 11 | C ₁₁ ClF ₂₀ O ₅ | 3,0 |
| 12 | C ₁₂ ClF ₂₂ O ₅ | 2,1 |
| 13 | C ₁₃ ClF ₂₄ O ₆ | 1,2 |
| 14 | C ₁₄ ClF ₂₆ O ₆ | 0,3 |

2. We would like to compare information for the congeners shown above to other PFAS ethers for which there is some information on toxicity and/or human bioaccumulation as follows. These are shown in the table below, which is excerpted from Table 1 on the website of the NC State Univ GenX Exposure Study at <https://chhe.research.ncsu.edu/the-genx-exposure-study/> . These are:

- GenX
- The four PFAS polyethers that have been found in blood serum of NC residents who were exposed to them through drinking water (see Slide 21 of <https://chhe.research.ncsu.edu/wordpress/wp-content/uploads/2018/11/Community-event-BLOOD-slides.pdf>)

I have the structures of some, but not all, of the compounds in the table below. If you need the structures, I think that the NC researchers can provide them.

| Short Name | Chemical Name | Chemical Formula | CAS Number |
|--------------------|---|--|-------------|
| GenX | Perfluoro-2-propoxypropanoic acid | C ₆ HF ₁₁ O ₃ | 13252-13-6 |
| Nafion byproduct 2 | Ethanesulfonic acid, 2-[1-[difluoro(1,2,2,2-tetrafluoroethoxy)methyl]-1,2,2,2-tetrafluoroethoxy]-1,1,2,2-tetrafluoro- | C ₇ H ₂ F ₁₄ O ₅ S | 749836-20-2 |
| PFO4DA | Perfluoro(3,5,7,9-tetraoxadecanoic) acid | C ₆ HF ₁₁ O ₆ | 39492-90-5 |
| PFO5DoDA | Perfluoro-3,5,7,9,11-pentaoxadodecanoic acid | C ₇ HF ₁₃ O ₇ | 39492-91-6 |
| Hydro-EVE | 2,2,3,3-tetrafluoro-3-(((1,1,1,2,3,3-hexafluoro-3-(1,2,2,2-tetrafluoroethoxy)propan-2-yl)oxy)propanoic acid | C ₈ H ₂ F ₁₄ O ₄ | 773804-62-9 |

Thank you!

Gloria